

U.S. Patent Application Serial No. 09/926,662
Amendment dated **March 10, 2004**
Reply to OA of **January 7, 2004**

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Previously Presented): A narrow band ultraviolet laser device comprising light shielding elements, each light shielding element having:

a light transmitting section constituted by an opening in said light shielding element for transmitting laser light;

a light shielding section that surrounds said light transmitting section, to remove undesired laser light from an optical path and shape the laser light into a predetermined form; and

heating means, in addition to laser light of the laser device, for heating gases surrounding said light shielding element to relieve nonuniformity of the temperature of gases inside said light transmitting section.

Claim 2 (Previously Presented): The narrow band ultraviolet laser device according to Claim 1,

wherein said heating means also performs heating in a state in which the laser light is not oscillated.

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Claim 3 (Previously Presented): The narrow band ultraviolet laser device according to Claim 1 or Claim 2, further comprising:

a laser controller for controlling laser oscillation; and

temperature measuring devices for measuring temperatures of gases inside said light transmitting sections; wherein:

said temperature measuring devices give information regarding said temperature of the gases to said laser controller; and

said laser controller starts laser oscillation based on said information.

Claim 4 (Previously Presented): A narrow band ultraviolet laser device comprising

a laser chamber with a laser gas being sealed therein, light shielding elements which are in vicinities of light transmitting windows provided at both sides of said laser chamber and on an axis connecting both of said windows, and a light shielding element for shielding part of laser light transmitted through a prism inside a band-narrowing module, said light shielding elements respectively having: light transmitting sections for transmitting laser light, and light shielding sections that surround said light transmitting sections, remove undesired laser light from an optical path and shape the laser light into a predetermined form, wherein

spraying means are provided for relieving ununiformity of the temperature of the gases inside said light transmitting sections by spraying an inert gas to the vicinity of said light shielding elements and replacing the gases in said light shielding element area.

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Claim 5 (Previously Presented): A narrow band ultraviolet laser device comprising
a laser chamber with a laser gas being sealed therein, light shielding elements which are in
vicinities of light transmitting windows provided at both sides of said laser chamber and on an axis
connecting both of said windows, and a light shielding element for shielding part of laser light
transmitted through a prism inside a band-narrowing module, said light shielding elements
respectively having: light transmitting sections for transmitting laser light, and light shielding
sections that surround said light transmitting sections, remove undesired laser light from an optical
path and shape the laser light into a predetermined form, wherein:

said light shielding sections are formed of a material including at least any one of aluminum,
aluminum alloy and copper,

the light shielding sections reflect the laser light at high reflectivity, thus causing less light
absorption of the light shielding elements and less rise in the temperature of the light shielding
sections, and

as a result, the light shielding sections relieve ununiformity in the temperature of the gases
inside the light transmitting sections.

Claim 6 (Currently Amended): A narrow band ultraviolet laser device comprising light
shielding elements having:

light transmitting sections for transmitting laser light; and

light shielding sections that surround said light transmitting sections, to remove undesired

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laser light from an optical path and shape the laser light into a predetermined form; wherein:

said light shielding sections ~~are formed of~~ include a solid material which transmits ~~any undesirable laser light not otherwise removed from the optical path and total reflection coating formed on a surface of said solid material, therefore in said solid material section,~~ gases do not exist in the laser light area, and no refraction index distribution caused by temperature distribution of the gases is caused; and

~~said light shielding sections~~ said total reflection coating sections have a function of removing the undesired light from the optical path by reflecting the laser light.

Claim 7 (Canceled)

Claim 8 (Currently Amended): A narrow band ultraviolet laser device comprising:

~~light shielding elements~~ undesired laser light removing elements for removing undesired laser light from an optical path and shaping laser light into a predetermined form; and

light transmitting sections bordered by said ~~light shielding elements~~ undesired laser light removing elements, for transmitting the laser light; wherein:

said ~~light shielding elements~~ undesired laser light removing elements are formed of a material which transmits the laser light, thus causing less light absorption of the ~~light shielding elements~~ undesired laser light removing elements and less rise in temperature of the ~~light shielding sections~~ undesired laser light removing sections, and as a result, said ~~light shielding elements~~ undesired laser


CaF_2 or MgF_2
synthetic fused silica

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light removing elements relieve ununiformity in the temperature of the gases inside the light transmitting sections; and

said ~~light shielding elements~~ undesired laser light removing elements have a function of refracting the laser light to remove the undesired laser light from the optical path.

Claim 9 (Canceled)

 Claim 10 (Previously Presented): A narrow band ultraviolet laser device comprising light shielding elements having:

light transmitting sections for transmitting laser light; and

light shielding sections that surround said light transmitting sections, remove undesired laser light from an optical path and shape the laser light into a predetermined form; wherein

said light transmitting sections are formed of a solid which transmits the laser light, therefore gases do not exist in the laser light area, and refraction index distribution caused by the temperature distribution of the gases does not occur.